CLAIMS

What is claimed is:

1. An actuation circuit having at least a first output and a second output, and a first input, comprising:

a current sink coupled to the first output, the current sink enabled when a current is applied to said first input; and

a decision switch coupled to the current sink and enabling a current path from the first input to the second output when a voltage present at said first output reaches a threshold.

2. The actuation circuit of claim 1 wherein the first output is coupled to a first force pad and the second output is coupled to a second force pad.

3. The actuation circuit of claim 1 wherein the decision switch is a diode.

4. The actuation circuit of claim 1 wherein the decision switch is a transistor.

5. The actuation circuit of claim 4 wherein the transistor has a gate, source and drain, and the gate is coupled to sense the first output.

6. The actuation circuit of claim 4 wherein the transistor is coupled between a current mirror and the input.

7. The actuation circuit of claim 6 wherein the current mirror is a PMOS current mirror.

8. The actuation circuit of claim 6 wherein the current mirror is a cascaded current mirror.

9. The actuation circuit of claim 1 further including a second current sink enabled responsive to a voltage at the second output.

10. The actuation circuit of claim 1 further including a manual reset transistor.

11. The actuation circuit of claim 1 wherein each of said first and second output is coupled to a drain of a high voltage PMOS transistor and a drain of a high voltage NMOS transistor.

12. The actuation circuit of claim 1 further including a gain element coupled in series with the decision transistor.

13. An apparatus comprising a micromechanical mirror structure positioned adjacent to a first and a second force pads, and a control circuit having a first output coupled to the first control pad and a second output coupled to the second control pad, the control circuit, comprising:

an input having a current coupled thereto;

a decision transistor coupled to the first output and enabling a current path to the second output; and

a current sink coupled to the first output.

14. The apparatus of claim 13 wherein said current sink is enabled by said current at said input.

15. The apparatus of claim 13 wherein said current sink is enabled by a voltage at the second output.

16. The apparatus of claim 13 wherein said current sink comprises a first transistor having a gate coupled to said input, and a second transistor having a gate coupled to said second output.

17. The apparatus of claim 13 further including a high voltage amplifier coupled to a transconductance stage, the transconductance stage having an output coupled to said input of said control circuit.

18. The apparatus of claim 13 wherein the control circuit includes a second input, a second decision transistor coupled to the second output and enabling a current path to the first output, and a second current sink coupled to the second output.

19. The apparatus of claim 13 wherein the current path is between a first voltage greater than zero and a second voltage greater than zero.

20. A method of operating a micromachined mirror having at least a first force pad coupled to a first control output and a second force pad coupled to a second control output, both force pads provided adjacent to the mirror, comprising:

receiving a control current designated for said first output;

detecting whether an output voltage is present at said second output;

sinking current second output to ground; and

steering the control current provided to said first output when said output voltage is below a threshold.

21. The method of claim 20 wherein said step of detecting comprises coupling a gate of a decision transistor to a conduction path of said fist output.

22. The method of claim 21 wherein said step of steering comprises activating said transistor when said output voltage reflected at said first output reaches said threshold.

23. The method of claim 20 wherein said step of sinking comprises sinking current responsive to said control current.

24. The method of claim 20 wherein said step of sinking comprises sinking current responsive to an output voltage present at said first output.

25. The method of claim 20 wherein said method further includes the step of clearing the voltage from said first output prior to said step of receiving.

26. An actuation circuit, comprising:

a first input and a second input;

a first output and a second output;

a first current sink coupled to the first output and enabled by a signal at said first input;

a second current sink coupled to the second output and enabled by a signal at said second input;

a first current steering switch enabled by said first output; and

a second current steering switch enabled by said second output.

27. The actuation circuit of claim 26 wherein each said output is provided at the drain electrodes of a drain coupled pair of an NMOS high voltage transistor and a PMOS high voltage transistor.

28. The actuation circuit of claim 26 further including a first high voltage cascode mirror coupled to said first current steering switch and a second cascode mirror couple to said second current steering switch.

29. The actuation circuit of claim 28 wherein each cascode mirror includes at least an NMOS transistor actuated to a bias voltage.

30. The actuation circuit of claim 26 wherein each said current steering switch is a transistor.

31. The actuation circuit of claim 26 wherein said current steering transistor is a PMOS transistor.

32. A steerable micromachined mirror assembly, comprising:

a micromachined mirror positioned adjacent to at least a first force pad and a second force pad;

a high voltage amplifier;

a low voltage transconductance stage; and

a control circuit coupled to said first force pad and said second force pad, the control circuit including:

a current sink coupled to the first force pad, the current sink enabled when a current from said transconductance stage is received; and

a decision switch coupled to the current sink and enabling a current path from the transconductance stage to the second output when a voltage present at said first output reaches a predetermined minimum level.

5